Marshall Space Flight Center
Office of the Chief Financial Officer (OCFO)

The Full Cost Initiative

Full Cost principles, practices, and the state of implementation

"I think it an object of great importance…To simplify our system of finance…the whole system [has been] involved in impenetrable fog...we might hope to see the finances of the Union as clear and intelligible as a merchant's books, so that every member of Congress, and every man of any mind in the Union, should be able to comprehend them to investigate abuses, and consequently to control them."

Thomas Jefferson,
April 1802

January 2, 2003

This paper summarizes the Agency full cost initiative and the current state of implementation at NASA, Marshall Space Flight Center (MSFC). The full cost initiative is designed to enhance cost-effective mission performance by modifying the way NASA does business so that managers are provided with better information to support decision-making. In its simplest terms, the full cost initiative ties all costs (including civil service personnel costs) to programs/projects. Under full cost, there are no "free" resources. All resources are associated with benefiting programs/projects. Currently, the Agency is scheduled to implement the full cost initiative on October 1, 2003 for the Fiscal Year (FY) 2004 Budget.

Objective

NASA's full cost initiative is designed to improve the way NASA achieves its mission by implementing new, improved management, budgeting, and accounting policies, practices, and procedures. These new full cost practices are designed to provide timely, accurate estimates and actual cost information on the services and support activities required to achieve cost efficient administrative and program mission performance. The use of full cost management, budgeting, and accounting does not, in and of itself, change the infrastructure; rather, it more clearly discloses infrastructure costs, and their relationship to projects, while facilitating the decision-making process. MSFC currently integrates some full cost concepts and practices into formulating the Center's future financial plan or budget. However, while similar integration of full cost accounting and management practices are expected in the future, such practices will not be fully operational until related financial systems become operational in late 2003/early 2004.

Mandate

The Federal Financial Management Improvement Act of 1996 mandated full cost practices for all Federal agencies. The law stated:

"The purposes of this Act are to…require Federal financial management systems to support full disclosure of Federal financial data, including the full costs of Federal programs and activities, to the citizens, the Congress, and President, and agency management, so that programs and activities can be considered based on their full costs and merits…"

Overview

The full cost concept ties all Agency costs (including civil service personnel costs) to major activities. These major activities, or final cost objects, within NASA are Agency programs/projects. As previously mentioned, there are no "free" resources; all costs are assigned to benefiting programs/projects. Examples of MSFC full cost projects include the Orbital Space Plane (OSP), Next Generation Launch Technology, External Tanks, Chandra, and etc. In contrast to the current approach in which civil service personnel costs and certain other costs of an infrastructure/institutional nature are not tied to projects, under the full cost approach all costs will be associated with projects.

Cost Categories

While costs may be categorized in many ways, NASA has separated costs into three major categories. Agency costs will be separated into these three categories: Direct, Service, and G&A.

Full cost = Direct Cost + Service Cost + G&A Cost

Direct costs are those costs that are obviously and/or physically identified to a project at the time they are incurred and are subject to the control and/or influence of the project manager. Such costs include Contractor-supplied hardware, and project labor (civil service or contractor).

Service costs are those costs that cannot be specifically and immediately identified to a project, but can subsequently be related, traced or linked to a project and are assigned based on usage or consumption. Such costs include Facilities and Related services, Information Technology services, and Science and Engineering Services.

General & Administrative (G&A) costs are those costs (Center and Corporate) that cannot be obviously or physically identified, traced or linked to a specific project but benefit all projects/activities and are allocated to a project based on a reasonable and consistent basis. The Agency has adopted two different methodologies for allocating Corporate and Center G&A due to the nature of these costs. Corporate G&A will be allocated to programs/projects based on direct costs, while Center G&A will be allocated based on direct onsite (civil service and contractors) workforce. Examples of Center G&A costs include the costs associated with Financial Management, Procurement, and Security. While such G&A activities can and should be provided as services to customers, typically such activities are referred to as support.

Center G&A rate*: Total G&A Cost / Total Project Direct Labor (civil service and contractor)

*Cost per Full Time Equivalent (FTE)

Corporate G&A: Non-direct, non-service, non-Center G&A costs that occurs. Applied to projects at the Agency-level based on direct costs.

Funding

The appropriation structure of the Agency provides the legal framework/authority to budget, expend, and account for the funding authorized to the Agency by Congress. Over the past few years, the appropriation structure in the Agency has evolved to support the implementation of full cost practices. Specifically, NASA has retained the Science, Aeronautics and Technology (SAT) and Human Space Flight (HSF) appropriations and has eliminated the mission support appropriation, which funded salaries/benefits, travel, research operations support, and construction of facilities. (NASA plans to continue to obtain a separate small appropriation for the independent NASA Office of Inspector General activities.)

Even with the elimination of the mission support appropriation, budgets for salaries, travel and other items continue to be separately identified and accounted for outside of the program/project budgets. Currently, MSFC receives different types of funding and separate appropriations as indicated in the table below. Research and Development (R&D) is used to fund program and project procurements. Research & Program Management (R&PM) supports the basic costs of civil service personnel – salaries/benefits and travel. Research Operations Support (ROS) supports the business management functions, and other basic Center operations such as fire services and security. Construction of Facilities (CoF) supports the construction and/or major rehabilitation of Center facilities.

Type of Funding	**Appropriation from Congress**
Research & Development (R&D)	Science, Aerospace, and Technology (SAT) Human Space Flight (HSF)
Research & Program Management Salaries/Benefits and related personnel costs Travel	(Old Mission Support) – currently identified separately under both SAT and HSF
Research Operations Support (ROS)	(Old Mission Support) – currently identified separately under both SAT and HSF
Construction of Facilities (CoF)	(Old Mission Support) – currently identified separately under both SAT and HSF

Under the full cost concept, civil service personnel salaries/benefits and related costs, travel, research operation support (ROS), and construction of facilities (CoF) will be added to the project R&D budgets in the existing SAT and HSF appropriations. In short, program/project managers will have to plan and manage the direct civil service labor that is required to accomplish their project, which is different than the current workforce approach. The sample below reflects the change in how funding will be budgeted under the Full Cost concept.

Marshall Space Flight Center FY 04 Full Cost Budget ($ in millions)

FUNDING BY ENTERPRISE	TOTAL	DIRECT (W/O SERVICE POOLS)	SERVICE POOLS ALLOCATED TO PROGRAMS	CENTER G&A ALLOCATED TO PROGRAMS
Space Science	296.500	281.379	7.672	7.449
HEDS	1,130.848	1,043.237	44.450	43.161
Earth Science	22.910	19.859	1.548	1.503
Aero-Space Technology	959.461	903.486	28.399	27.576
Biological & Physical Research	285.235	210.272	38.033	36.930
Academic Programs	11.748	10.897	0.432	0.419
Facilities Investment	34.595	34.595	0.000	0.000
TOTAL	**2,741.297**	**2,503.725**	**120.534**	**117.038**
CORPORATE G&A PERFORMED AT CENTER	134.117			
TOTAL CENTER FUNDING	**2,875.414**			

Service Pools

MSFC operates five Service Pools. The Science/Engineering Pool consists of four sub-pools. The following is a list of Service Pools at MSFC and the names of their respective managers and lead analysts:

1. Facilities and Related Services — Keith Kirksey (L.Carpenter)
2. Information Technology Services — Marcellus Graham (Clay Walker)
3. Science / Engineering Services — Karen McTaggart (Icle Blankenship)
    - *1.Flights Directorate* — *Marie Malone (Jackie Steadman)*
    - *2.Engineering Directorate* — *Karen McTaggart (Icle Blankenship)*
    - *3.Transportation Directorate* — *Nancy McNeill*
    - *4.Science Directorate* — *Donald Bishop (Cheryl Erdner)*
4. Fabrication Services — Scott Moore (David McGaha)
5. Test Services — Nancy McNeill

Service Pools allocate costs to projects based on the amount of the service or product each project consumes. Costs to projects are derived from the pool developing a "rate", which is then multiplied by the project's respective consumption measurements. A pool's rate is derived from dividing the pool's total annual cost by the total number of units consumed by all projects that same year.

Program Mission Support

Pursuant to the ongoing evolution of MSFC full cost practices, the old "Program Support" terminology and practices have been changed to more accurately reflect evolving MSFC business concepts and practices. Such practice changes are required to help ensure MSFC's future as one of the Nation's premier aerospace research and development (R&D) organizations. Affordable, consumption-based,

cost efficient **services to customers** are replacing the old perceived paradigm of Program Support "taxes". Consequently, the new terms **service** pool and G&A support are being used as a more accurate description of current practices.

Under the old "program support" approach, programs paid for general support based on estimated workforce, not consumption. As a consequence, some people perceived program support was a general tax on gross R&D funds/workforce. The new "service pool and G&A" practices follow full cost principles, and are designed to ensure that services are established based on program/project customer requirements and that such customers pay for the services they consume.

The key differences between the two approaches are the linkage between the services and the customers and the integration of civil service labor costs. In the "old" program support approach, no clearly identifiable link exists between the support being provided, such as utilities, materials and equipment, and the customer. Programs paid for support costs as a lump sum based on estimated workforce use whether they used the specific support or not. In contrast, in the "new" approach a clear link is being established between the service and the customer. Program customer's pay for service activity costs, including civil service labor costs, based on estimated use (with subsequent actual usage updates) of specific services and receives an allocation of G&A support based on total direct workforce.

Benefits of the full cost initiative

A number of benefits can be expected from the use of full cost information. These benefits include:

- Improved, cost effective, mission performance, through the use of better information for plans, decisions, and disclosure;
- Strengthened ties between NASA's missions, programs/projects, and budget requests;
- Maximum program content within constrained budgets;
- Effective tool for program/project managers to better manage;
- Consistency and compliance with sound business practice;
- Compliance with recent legislation and administrative guidance, including the 1990 Chief Financial Officers Act, 1993 Government Performance and Results Act, Federal Financial Management Improvement Act of 1996 and the 2001 President's Management Agenda.

Questions & Answers

What is full cost?
The concept of full cost ties all Agency costs, including Civil Service personnel costs and certain other costs of an institutional nature to major activities (referred to as projects at NASA.)

What is the purpose of full cost?
The overall objective of the full cost initiative is to enhance cost-effective mission performance by modifying the way NASA does business so that managers are provided with information, which supports better plans and decisions.

How will full cost benefit the Agency/Center?
The full cost initiative will associate all costs with programs/projects enabling managers to have better information to support the decision making process.

When will the full cost initiative be implemented at MSFC?
The full cost initiative will be fully implemented at the beginning of FY 2004 (October 2003). Under the full cost initiative, all costs (including civil service personnel) will be associated with programs/projects.

How will costs be categorized under the full cost approach?
NASA's full cost approach will separate costs into three categories: Direct Costs, Service Costs, and General and Administrative (G&A) Costs. The full cost of a project is the sum of all direct costs, service costs, and G&A costs associated with the project.

What is a cost pool?
A cost pool is an accumulation of similar costs and cost types that are distributed to projects by an assignment or allocation methodology that best links the costs with the customer's served/supported. Cost pools will be used in the new IFM system for service activities and G&A costs.

What are Service Pools?
Service Pools are activities that the Center provides to support employees and programs that operate at MSFC. Services include all Center provided activities required to maintain the Center and meet mission objectives and milestones. Services include activities such as Facility and Related Services, Information Technology Services, and Science and Engineering Services.

Who receives these services?
Center employees, on-site contractors, and visitors receive a variety of basic Center services, such as Facilities and Related Services.

Who manages the Service Pools?
Each Service Pool is managed by a MSFC civil servant who oversees the operations, costs, and bills associated with the service.

Who pays for the services?
Customers or users of the services pay the costs of the services. These users may include programs, projects, organizations, as well as external customers.

How do customers pay for services?
Programs pay for services based on estimated use of services identified during the budget process. Each Service Pool provides a specific unit of consumption. MSFC uses special financial accounts, called carrier accounts, to fund, capture and distribute service costs to programs (customers). MSFC typically updates estimated service information with actual service use during the operating year and in related service cost distributions.

How much do MSFC services cost?
The cost of MSFC services are based on the full cost of the service. Specific rates for FY04 are currently being developed by their respective pool managers.

When are customers billed for services?
Customers are alerted to the anticipated bills for services based on customer requirements during the annual budget formulation process. The actual bills are distributed prior to the beginning of the Fiscal Year and typically updated during the year for major changes between estimated and actual use.

Are service bills ever updated for requirement changes?
Yes. Service bills are typically updated in the winter or spring to accommodate requirement changes.

Why do the services cost so much?
MSFC is a world-class high technology Research and Development (R&D) Center with unique capabilities. The costs of Center services are commensurate with MSFC's mission requirements.

Who determines the scope, size and costs of Center services?
Customers, service providers and MSFC senior management determine the scope, size, content and cost of the services at MSFC.

Why can't programs and projects obtain required services somewhere else?
MSFC must provide certain basic services to remain a premier R&D organization and to achieve Agency missions. Programs are required to obtain certain services through the Center rather than elsewhere to achieve Agency, Center and program security, safety, quality and economic imperatives.

What is the future for Center services and cost practices?
In the next few years, MSFC plans to improve the systems used to collect and distribute service costs. MSFC plans to directly charge net program research accounts for consumed services. The Integrated Financial Management Program (IFMP) System will provide timely, reliable financial information and subsequently to support full cost practices, including related labor costs.